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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.												
10/616,548	07/10/2003	Lco Baldwin	ESI-144-B	2806												
7590 Thomas E. Bejin YOUNG & BASILE, PC Suite 624 3001 West Big Beaver Road Troy, MI 48084		09/13/2007	<table border="1"><tr><td colspan="2">EXAMINER</td></tr><tr><td colspan="2">STAFIRA, MICHAEL PATRICK</td></tr><tr><td>ART UNIT</td><td>PAPER NUMBER</td></tr><tr><td>2886</td><td></td></tr><tr><td>MAIL DATE</td><td>DELIVERY MODE</td></tr><tr><td>09/13/2007</td><td>PAPER</td></tr></table>		EXAMINER		STAFIRA, MICHAEL PATRICK		ART UNIT	PAPER NUMBER	2886		MAIL DATE	DELIVERY MODE	09/13/2007	PAPER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/616,548	Applicant(s) BALDWIN ET AL.	
	Examiner Michael P. Stafira	Art Unit 2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed 6/14/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

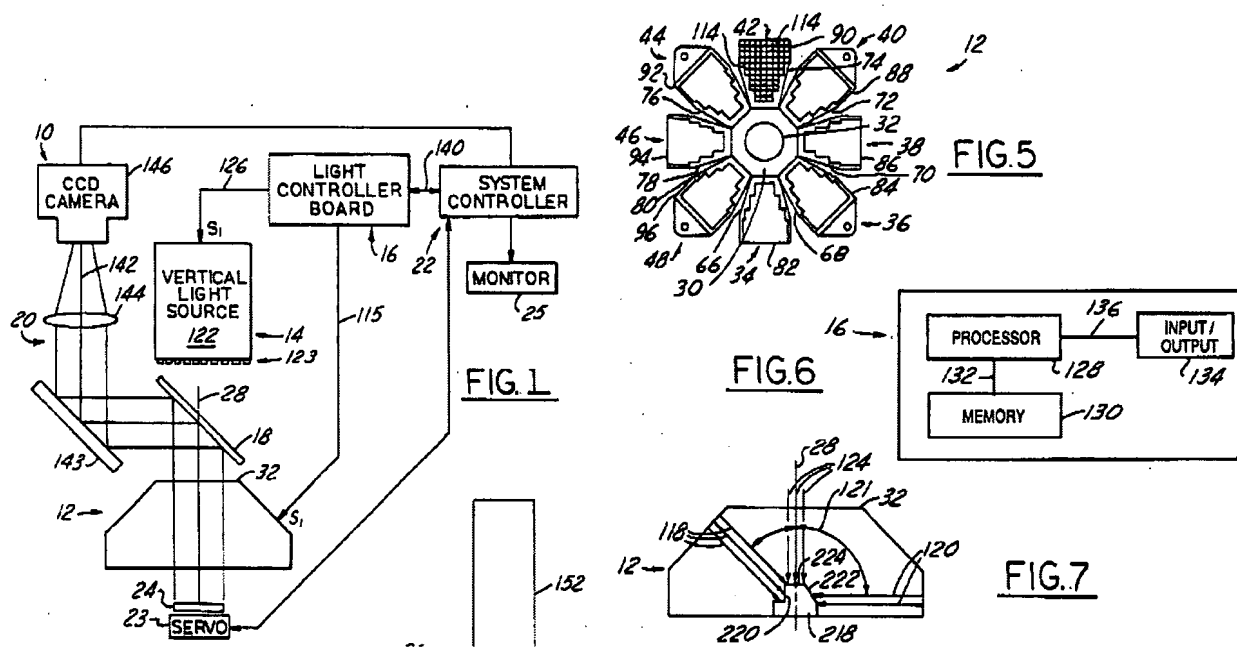
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 17-22, 24-26, 28, 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Borgert et al. ('496).

Claim 17

Borgert et al. ('496) an illumination panel (Fig. 5, Ref. 114) defining a planar illuminating surface having a depth sufficient to illuminate the object inspection surface (Fig. 1, Ref. 24), the planar illuminating surface is angularly positioned away from a plane perpendicular to the inspection surface to provide illumination at a substantially constant angle of incidence across the entire portion of the inspection surface (Fig. 7, Ref. 118)(Col. 4, lines 17-30).



Claim 18

Borgert et al. ('496) discloses the illuminating surface includes a plurality of discrete illumination sources ((Col. 3-4, lines 57-16), each source projecting illumination onto a respective area of the inspection surface at the substantially constant, angle of incidence (See Fig. 7).

Claim 19

Borgert et al. ('496) further discloses the illuminating panel comprises a single panel (Fig. 5, Ref. 114) wherein all of the discrete light sources are connected to the single panel (Fig. 5, Ref. 114), the single panel having a plurality of planar illuminating surfaces angularly positioned with respect to one another around the plane perpendicular to the inspection surface (Col. 4, lines 3-29).

Claim 20

Borgert et al. ('496) discloses the illumination panel comprises at least two panels (See Fig. 5) each having a planar illuminating surface and a width perpendicular to the depth to maintain the substantially constant angle of incidence on the inspection surface (Col. 4, lines 3-29).

Claim 21

Borgert et al. ('496) discloses the inspection surface comprises the entire surface of the object in a field of view of an image sensing device (Fig. 1, Ref. 10).

Claim 22

Borgert et al. ('496) further discloses the illumination at the substantially constant angle of incidence provides substantially uniform illumination of the inspection surface (See Fig. 7).

Claim 24

Borgert et al. ('496) further discloses the substantially constant angle of incidence is an angle complementary to the angular position of the planar illuminating surface (See Fig. 1, 7).

Claim 25

Borgert et al. ('496) further discloses the constant angle of incidence defines a nominal illumination angle for uniformly illuminating the inspection surface to detect a non-uniformity in the inspection surface (See Abstract).

Claim 26

Borgert et al. ('496) discloses an imaging device including a lens (Fig. 1, Ref. 144) arrangement and a sensing element (Fig. 1, Ref. 144); an illumination panel (Fig. 5, Ref. 114) defining a planar illuminating surface angularly positioned away from a plane perpendicular to the inspection surface (Fig. 7), the planar illuminating surface including a plurality of discrete illuminating sources positioned along a depth of the panel, each illumination source is connected to the panel and is angularly positioned to provide illumination at a substantially constant angle of incidence across the entire inspection surface providing substantially uniform illumination of the inspection surface (Col. 3-4, lines 57-48).

Claim 28

Borgert et al. ('496) discloses the illumination panel has at least two panels angularly positioned to maintain the constant angle of incidence on the inspection surface (See Fig. 7).

Claim 30

Borgert et al. ('496) providing an illumination panel (Fig. 5, Ref. 114) having a planar illuminating surface including a depth (See Fig. 5), the illuminating surface angularly positioned away from a plane perpendicular to the inspection surface (See Fig. 7); projecting illumination from the planar illuminating surface at a substantially constant angle of incidence across the inspection surface to uniformly illuminate the inspection surface (Col. 3-4, lines 57-48).

Claim 31

Borgert et al. ('496) further discloses providing a plurality of discrete illuminating sources connected to the panel and positioned along the depth of the planar illuminating surface,

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each discreet illuminating source illuminating a respective portion of the inspection surface at the substantially constant angle of incidence (See Fig. 5 & 7).

Claim 32

Borgert et al. ('496) discloses the illumination panel having a single panel including a plurality of planar illuminating surfaces in a conical orientation around the plane perpendicular to the inspection surface (See Fig. 5 & 7).

Claim 33

Borgert et al. ('496) further discloses the illumination panel having at least two panels positioned to maintain illumination at substantially constant angle of incidence on the inspection surface (See Fig. 5, 7).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 23, 29, 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borgert et al. ('496) in view of Dana (2002/0080357).

Claim 23, 29, 34-36

Borgert et al. ('496) substantially teaches the claimed invention except that it does not show determining a constant angle of incidence, positioning the illuminating surface at a complementary angle, surface exhibits a nontrivial bi-directional reflectance distribution function

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or determining the constant angle of incidence by performing non-sequential ray tracing techniques based on the non-uniformity to be detected. Dana (2002/0080357) shows that it is known to provide determining a constant angle of incidence and positioning the illuminating surface at an angle or ray tracing (Para. 0041, 0053, 0036) for an optical measuring apparatus. It would have been obvious to combine the device of Borgert et al. ('496) with the determining a constant angle etc.. of Dana (2002/0080357) for the purpose of providing an illumination light source that optimizes the angle of the light source so as to maximize the illumination of the surface, therefore reducing the amount of noise created which increases the signal quality.

3. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Borgert et al. ('496) in view of Luk (2002/0181231).

Claim 27

Borgert et al. ('496) substantially teaches the claimed invention except that it does not show the panel is a single conically-shaped panel. Luk (2002/0181231) shows that it is known to provide a circuit board with LEDs in the shape of a conically-shaped panel (Page 12, Para.0162) for an optical illumination device. It would have been obvious to combine the device of Takagi et al. ('985) with the cone shape of Luk (2002/0181231) for the purpose of providing a illumination device that covers multiple illuminations angles, therefore providing proper illumination of different size objects which increases the accuracy of the measurements.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael P. Stafira
Primary Examiner
Art Unit 2886

August 27, 2007